TELEPHONE APPARATUS CAPABLE OF INPUTTING CHARACTER DATA

This is a continuation, of application Ser. No. 378,730, filed May 17, 1982, now abandoned.

BACKGROUND OF THE INVENTION

The present invention relates to a telephone apparatus, and more particularly to a telephone apparatus which can input character data by operating the numeral keys of the conventional keyboard.

The conventional telephone has a keyboard having numeral keys for inputting telephone numbers. In order to input character data through the telephone, the telephone must be provided with a keyboard having character keys in addition to numeral keys.

SUMMARY OF THE INVENTION

It is an object of the present invention to provide a telephone apparatus which has a keyboard including numeral keys and two or more additional keys and which can input character data by operating the numeral keys and the additional keys in a prescribed sequence.

In order to achieve the above-mentioned object, there is provided according to the invention a telephone apparatus capable of inputting character data as well as numeral data, comprising telephone network means connected to a handset and terminals connected to a telephone exchange station; a keyboard means having a sequence start key, numeral keys each assigned to a plurality of characters/symbols, special key for executing a sequence, a sequence end key and a mode switching key for switching a numeral mode to a character/-symbol mode and vice versa; a controller means connected to the telephone network means and the keyboard for outputting character/symbol pattern signals in a predetermined sequence, said controller means being comprised of means connected to the keyboard means for setting desired mode as the mode switching key is operated; first character/symbol selecting means connected to the keyboard means for selecting one of characters/symbols assigned to the numeral keys by operating the key assigned to the character/symbol selected, after the mode setting means has been set to the character/symbol mode and for outputting a character/symbol pattern signal representing character/-symbol selected; and second character/symbol selecting means connected to the keyboard means for holding the character/symbol pattern signal from the first character/symbol selecting means, selecting another character/symbol than the character/symbol selected by the first character/symbol selecting means, said other character/symbol being assigned to the same key, by operating the same key and then operating the special key for executing a sequence and for outputting a character/symbol pattern signal representing said other character/symbol selected. In one embodiment of the present invention, the first character/symbol selecting means selects a plurality of characters/symbols assigned to the any desired numeral key one by one upon depressing of the desired numeral key thus assigned for the characters/symbols and outputs character/symbol pattern signals representing the characters/symbols thus selected. The second character/symbol selecting means holds a character/symbol pattern signal outputted from the first character/symbol selecting means, selects another character/symbol by operating the same numeral key and then the special key for executing a predetermined sequence and then outputs a character/-symbol pattern signal representing the other character/-symbol thus selected.

Since the telephone apparatus of the present invention is thus constructed, it can output the desired character/symbol pattern signal by operating one of numeral keys assigned to a plurality of characters of symbols and two or three additional keys in a predetermined sequence and by executing the predetermined sequence by means of a controller containing a microcomputer in response to the keying operation. Therefore, the telephone apparatus according to the invention can input character/symbol data without parts and components such as a keyboard in addition to the ordinary keyboard and thus without being complicated.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. **1** is a block circuit diagram schematically showing the general construction of the telephone apparatus according to the present invention;

FIG. **2** is a plane view showing the arrangement of the keys of the keyboard shown in FIG. **1**;

FIG. **3** is a concrete circuit arrangement showing one preferred embodiment of a controller shown in FIG. **1**;

FIGS. **4A** and **4B** are a flowchart showing one embodiment of the telephone apparatus for describing the execution of one sequence of the apparatus by keying operation;

FIG. **5** is a view showing the transfer of the display on the display section of a character pattern signal upon keying of the keyboard in accordance with the flowchart shown in FIGS. **4A** and **4B**;

FIGS. **6A** and **6B** are a flowchart showing another preferred embodiment of the present invention for describing the execution of another sequence upon keying of the keyboard; and

FIG. **7** is a view showing the transfer of the display on the display section of a character pattern signal upon keying of the keyboard in accordance with the flowchart shown in FIGS. **6A** and **6B**.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

The present invention will now be described in more detail with reference to the accompanying drawings.

As shown in FIG. **1**, a telephone network **1** is connected to a terminal **2** connected to a central telephone exchange, to a handset **3** and further to a controller **4**. The controller **4** receives an input signal from a keyboard **5** upon keying operation, executes a sequence in accordance with a predetermined flowchart, sequentially outputs a character/symbol pattern signal, and displays the character/symbol through a display driver **6** on a display section **7**.

The telephone network **1** may, for example, use a conventional network as disclosed in FIG. **10** on page IV-6 of a reference entitled "TELECOMMUNICATION DATA BOOK" (issued in March, 1981 by MOSTEK Corporation).

In the keyboard **5**, a plurality (three each) of characters/symbols are respectively assigned for **1** key to **9** key of the numeral keys as shown in FIG. **2**. The characters Q and Z and the symbol (.) are assigned for the **1** key. A, B and C are assigned for the **2** key, D, E and F are assigned for the **3** key, G, H and I are assigned for